

## 1.3 Day 1: Atlantic City to Lewes

Sidney, Liz, Celia, Malcolm, and Theo found they could comfortably ride from 60 to 90 miles in one day. They use these findings, as well as a map and campground information, to plan a three-day tour route. They wonder if steep hills and rough winds coming off the ocean might make the trip too difficult for some riders.

It is time to test the projected tour route. The students want the trip to attract middle school students, so Sidney asks her 13-year-old brother, Tony, and her 14-year-old sister, Sarah, to come along. The students will collect data during the trip and use the data to write detailed reports. Using the reports, they can improve their plans and explain the trip to potential customers.

They begin their bike tour in Atlantic City and ride five hours south to Cape May, New Jersey. Sidney and Sarah follow in a van with camping gear. Sarah records distances traveled until they reach Cape May. She makes the table at the right.

From Cape May, they take a ferry across the Delaware Bay to Lewes (LOO-is), Delaware. They camp that night in a state park along the ocean.

Atlantic City to Cape May

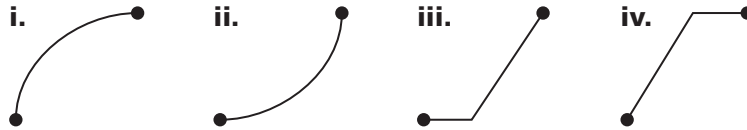
Time (hr)	Distance (mi)
0	0
0.5	8
1.0	15
1.5	19
2.0	25
2.5	27
3.0	34
3.5	40
4.0	40
4.5	40
5.0	45

### Problem 1.3 Interpreting Graphs

- Make a coordinate graph of the time and distance data in Sarah's table. Show time on the  $x$ -axis.
- Analyze your graph by answering the following questions:
  - Give the coordinate pair for the third point on your graph. What information does this point give?
  - Connecting the points on a graph sometimes helps you see a pattern more clearly. You can connect the points to consider what is happening in the intervals between the points.

Connect the points on your graph with straight line segments. Use the line segments to estimate the distance traveled after  $\frac{3}{4}$  of an hour (0.75 hours).

3. The straight-line segment you drew from (4.5, 40) to (5.0, 45) shows the progress if the riders travel at a steady rate for the entire half hour. The actual pace of the group, and of individual riders, may vary throughout the half hour. These paths show some possible ways the ride may have progressed:



Match each of these connecting paths with the travel notes below.

- a. Celia rode slowly at first and gradually increased her speed.
  - b. Tony and Liz rode quickly and reached the campsite early.
  - c. Malcolm had to fix a flat tire, so he started late.
  - d. Theo started off fast. He soon felt tired and slowed down.
- C. Sidney wants to describe Day 1 of the tour. Using information from the table or the graph, what can she write about the day's travel? Consider the following questions:
- How far did the group travel? How much time did it take them?
  - During which time interval(s) did they go the greatest distance? During which time interval(s) did they go the least distance?
  - Did the riders go farther in the first half or the second half of the day's ride?
- D. Sidney wants to include either the table or the graph in her report. Which do you think she should include? Why?

**ACE** Homework starts on page 15.

